

## PATENT ABSTRACTS OF JAPAN

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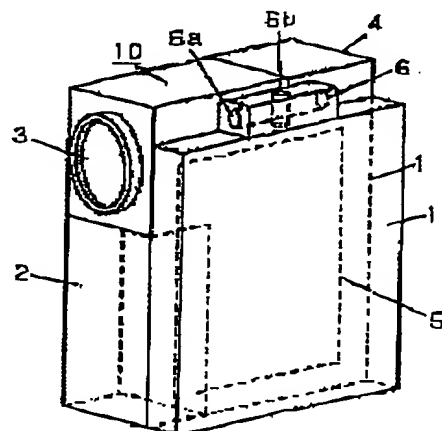
(72)Inventor : KUSUNOKI KENJI

## (54) RECORDING AND REPRODUCING DEVICE

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To obtain the device capable of easily confirming an object and excellent in carrying performance by integrating a 2nd casing with a hinge provided in the vicinity of an upper part of a 1st case, opening the 2nd casing from a lower side toward an upper side by using a horizontal shaft of the hinge as a 1st turning shaft and making the 2nd casing turnable around a shaft in crossing perpendicularly to the 1st turning shaft as a 2nd turning shaft.

**SOLUTION:** A television camera section 3 converts optical information into electronic video information, the information is recorded by a VTR section 1 and a finder 4 visualizes the recorded information. The electron video information is visualized on a monitor screen 5 of a 2nd casing 11. The upper part of the 2nd casing 11 is supported turnably to the 1st case 10 with a hinge 6 consisting of two turning shafts, that is, 1st and 2nd turning shafts 6a, 6b which are configured perpendicularly to each other, then the 2nd casing 11 is at first turned around the 1st turning shaft 6a configured horizontally. Thus, a monitor image 5 of the 2nd casing 12 whose size is nearly equal to that of the 1st casing 10 is directed to a peeping photographer.



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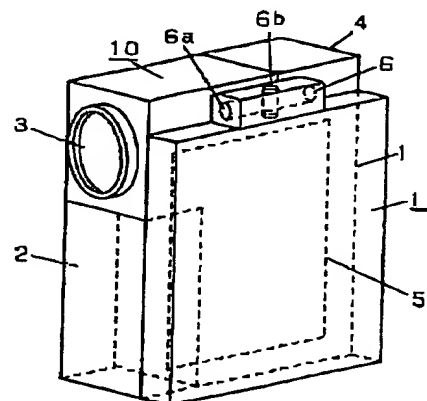
(54) 【発明の名称】 記録再生装置

(57) 【要約】

【課題】 縦長に構成された記録再生装置に大型のモニター画面を搭載して、携帯性が良く被写体が容易に確認できる記録再生装置の提供を目的とする。

【解決手段】 垂直に構成された2軸の回動軸6a、6bを有するヒンジ6がモニター画面5を有する第2の筐体11をその短辺において縦長の第1の筐体10の上部に回動支持しているので、より大型のモニター画面5を搭載することができる。

- 1 VTR部
- 2 バッテリー部
- 3 テレビカメラ部
- 4 ファインダー部
- 5 モニター画面
- 6 ヒンジ
- 6a 第1の回動軸
- 6b 第2の回動軸
- 10 第1の筐体
- 11 第2の筐体



## 【特許請求の範囲】

【請求項1】 記録再生部とテレビカメラ部を配置した第1の筐体と、モニター画面を備えた第2の筐体があり、前記第2の筐体は前記第1の筐体の側面に位置し、前記第1の筐体の上部近傍に備えた2軸の回転が自在になるヒンジを介して前記第2の筐体と一体となり、前記第2の筐体は、前記ヒンジの水平方向の軸を第1の回転軸として、下方側から上方側に向かって開き、前記第1の回転軸に垂直に交差する軸を第2の回転軸として回転可能な構成を特徴とする記録再生装置。

【請求項2】 第1の筐体を縦長に配置し、第2の筐体の短辺側を前記第1の筐体の上部に向ける構成を特徴とする請求項1記載の記録再生装置。

【請求項3】 第2の筐体のモニター画面は第1の筐体と同等付近まで大型化が可能となる構成を特徴とする請求項2記載の記録再生装置。

【請求項4】 第2の筐体のモニター画面が第1の筐体の反対面を向き第1の筐体の側面に平行にとりつけた状態で、第1の筐体を横長に傾け、第2の筐体の長辺側を上部に向けてモニター画面を見ることが可能となる構成を特徴とする請求項2記載の記録再生装置。

## 【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明は、ビデオカメラ等の記録再生装置に関するものである。

【0002】

【従来の技術】 近年、ビデオカメラ等の記録再生装置は様々な形態のものが提案されている。

【0003】 以下、図面を参照しながら従来の記録再生装置の構成について説明する。図6は、従来の記録再生装置の構成を示す斜視図で、図6において、VTR部61とテレビカメラ部62を縦長に配置した第1の筐体60と、モニター画面63を備えた第2の筐体65があり、この第2の筐体65は第1の筐体60の側面に横長に配置し、第1の筐体60の前方に備えた2軸の回転が自在となるヒンジ64を介して第2の筐体65と一体となり、第2の筐体65は、ヒンジ64の垂直方向の軸を第1の回転軸64aとして後方側から前方側に向かって開き、図7のように第1の回転軸に垂直に交差する軸を第2の回転軸64bとして回転可能である。

【0004】

【発明が解決しようとする課題】 しかしながら上記の従来の構成では、第1の筐体60が縦長に配置されるのに対して、第2の筐体65は第1の筐体60と平行に横長に配置されるので、第2の筐体65の長辺側の長さは第1の筐体60の短辺側の長さと同程度になってしまうことにより第2の筐体65のモニター画面63は第1の筐体60に比べて小さいものとなり、被写体を確認しづらくなる。また、第2の筐体65のモニター画面63を大きくするためには、第1の筐体60の短辺側の長さより

第2の筐体65の長辺側の長さを大きくしなければならず携帯性が悪くなるという問題点を有していた。

【0005】 本発明は上記従来の問題点を解決するもので、縦長に構成された記録再生装置に大型のモニター画面を搭載することにより、携帯性が良く被写体が容易に確認できる記録再生装置を提供することを目的とする。

【0006】

【課題を解決するための手段】 この目的を達成するために本発明の記録再生装置は、記録再生部とテレビカメラ部を配置した第1の筐体と、モニター画面を備えた第2の筐体があり、第2の筐体は第1の筐体の側面に位置し、第1の筐体の上部近傍に備えた2軸の回転が自在になるヒンジを介して第2の筐体と一体となり、第2の筐体は、ヒンジの水平方向の軸を第1の回転軸として、下方側から上方側に向かって開き、第1の回転軸に垂直に交差する軸を第2の回転軸として回転可能な構成を特徴とするものである。

【0007】 この構成によって、大型のモニター画面を搭載することができ、携帯性が良く被写体が容易に確認できる記録再生装置が得られる。

【0008】

【発明の実施の形態】 本発明の請求項1に記載の発明は、記録再生部とテレビカメラ部を配置した第1の筐体と、モニター画面を備えた第2の筐体があり、第2の筐体は第1の筐体の側面に位置し、第1の筐体の上部近傍に備えた2軸の回転が自在になるヒンジを介して第2の筐体と一体となり、第2の筐体は、ヒンジの水平方向の軸を第1の回転軸として、下方側から上方側に向かって開き、第1の回転軸に垂直に交差する軸を第2の回転軸として回転可能な構成を特徴とするものであり、垂直に構成された2軸の回転軸を有するヒンジがモニター画面を有する第2の筐体を縦長の第1の筐体の上部に回転支持しているため、より大型のモニター画面を搭載することができるとい作用を有する。

【0009】 請求項2に記載の発明は、第1の筐体を縦長に配置し、第2の筐体の短辺側を第1の筐体の上部に向ける構成を特徴とするもので、請求項3に記載の発明は、第2の筐体のモニター画面は第1の筐体と同等付近まで大型化が可能となる構成を特徴とするもので、請求項4に記載の発明は、第2の筐体のモニター画面が第1の筐体の反対面を向き第1の筐体の側面に平行にとりつけた状態で、第1の筐体を横長に傾け、第2の筐体の長辺側を上部に向けてモニター画面を見ることが可能となる構成を特徴とするものである。

【0010】 以下、本発明の実施の形態について、図1～図5を用いて説明する。

（実施の形態1） 図1～図5は本発明の記録再生装置の構成を示す斜視図であり、図1は第2の筐体を第1の筐体に重ねた状態、図2は第2の筐体を起こした状態、図3はモニター画面が見やすいように第2の筐体を回転さ

せた状態、図4はいわゆる「自分撮り」用にモニター画面を被写体の方に向けた状態、図5はモニター画面が見えるようにして第1の筐体と第2の筐体を重ねた状態を各々示している。

【0011】図1において、10は第1の筐体で、縦長に構成され、VTR部1を内部に構成し、またその正面にテレビカメラ部3を構成し、テレビカメラ部3の下、すなわち第1の筐体10の下而下部にバッテリー部2が構成されている。11は第2の筐体で、第1の筐体10の側面とほぼ同等あるいはやや小さい大きさの面を有し、その面にモニター画面5が構成され、かつモニター画面5の短辺側近傍に第1の筐体10と回動支持されるためのヒンジ部6が構成されている。ヒンジ部6は第1の筐体10の側面の上部近傍に構成され、水平方向の第1の回動軸6aと、第1の回動軸6aに垂直な第2の回動軸6bとから構成されている。4はファインダーで第1の筐体10の背面、すなわちテレビカメラ部3のある面と逆の面に構成されている。

【0012】以上のように構成された記録再生装置について、図1～図5を用いてその動作を説明する。まず、図1において、テレビカメラ部3により光学情報を電子映像情報に変換し、周知のようにVTR部1で記録され、又ファインダー4で映像化される。この電子映像情報は第2の筐体11にあるモニター画面5でも映像化される。

【0013】この第2の筐体11は、その上部を垂直に構成された2軸の回動軸すなわち第1、第2の回動軸6a、6bからなるヒンジ部6で第1の筐体10に回動支持されているため、まず水平に構成された第1の回動軸6aを支軸として回動することで図2に示す形態になる。次に第1の回動軸6aと垂直な第2の回動軸6bを回動支軸として第2の筐体11を回動することで図3に示すような形態になる。これにより第1の筐体10とほぼ同等な大きさの第2の筐体11のモニター画面5がファインダー4を覗いている撮影者に向くことになる。モニター画面5は第2の筐体11の平面全面、言い換えれば第1の筐体10の側面とほぼ同等の面に構成でき、そのため大型のモニター画面にすることができるので、視認性が非常によく撮影内容の確認が容易にできる。

【0014】この第2の筐体は第2の回動軸により回動することで、ローアングル撮影、ハイアングル撮影にもモニター画面5を撮影者正面に向かわせることができ、また図4のようにモニター画面5をテレビカメラ部と同方向に向かわせることで自分撮りもできる。どの場合も

大型のモニター画面5により非常に撮影内容の視認性がよいことは言うまでもない。

【0015】さらに、元の図1に示すように第2の筐体11を回動して収納することで、携帯時にもかさばらないし、図5に示すようにモニター画面5を表に出すように収納することで、VTR部1の再生内容を大型のモニター画面に映像化することができ、大勢の人で容易に視聴することができる。

【0016】以上のように本実施の形態によれば、第1の筐体を縦長に配置し、第2の筐体の短辺側を第1の筐体の上部に向ける構成にすることにより、携帯性が良く、第2の筐体のモニター画面を大型化でき、視認性を良くすることが可能であり、また、第1の筐体を横長にすることにより安定した状態で再生することが可能な記録再生装置を提供することができる。

【0017】

【発明の効果】以上のように本発明は、携帯性が良く、また大型のモニター画面を搭載することで、通常の撮影時に加えて高いアングルでの撮影時や、対面撮影時に視認性が良くなり、また反転収納時に記録再生装置が安定した状態でモニター画面を見ることができるといった優れた効果が得られる。

【図面の簡単な説明】

【図1】本発明の記録再生装置の実施の形態1の構成を示す斜視図

【図2】同、動作説明のための構成斜視図

【図3】同、動作説明のための構成斜視図

【図4】同、動作説明のための構成斜視図

【図5】同、動作説明のための構成斜視図

【図6】従来の記録再生装置の構成斜視図

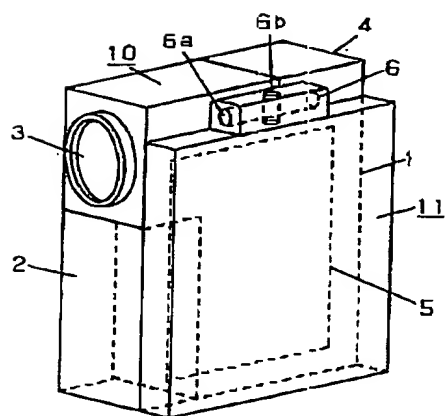
【図7】従来の記録再生装置におけるモニター画面の回動状態を示す斜視図

【符号の説明】

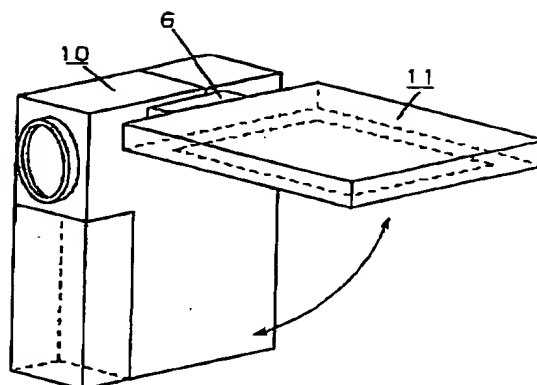
- 1 VTR部
- 2 バッテリー部
- 3 テレビカメラ部
- 4 ファインダー部
- 5 モニター画面
- 6 ヒンジ
- 6a 第1の回動軸
- 6b 第2の回動軸
- 10 第1の筐体
- 11 第2の筐体

【図1】

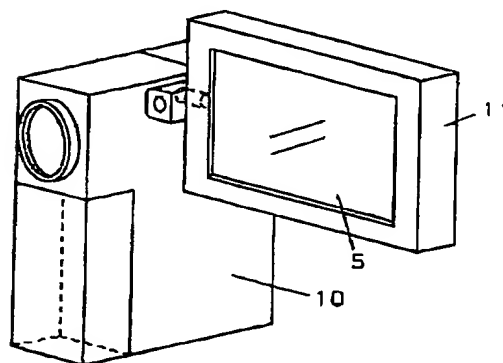
- 1 VTR部
- 2 バッテリー部
- 3 テレビカメラ部
- 4 ファインダー部
- 5 モニター画面
- 6a ヒンジ
- 6b 第1の回転軸
- 6c 第2の回転軸
- 10 第1の筐体
- 11 第2の筐体



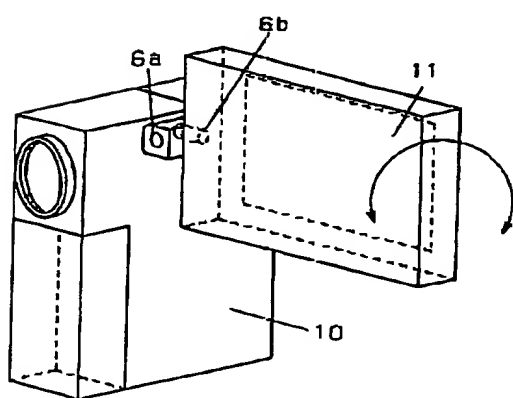
【図2】



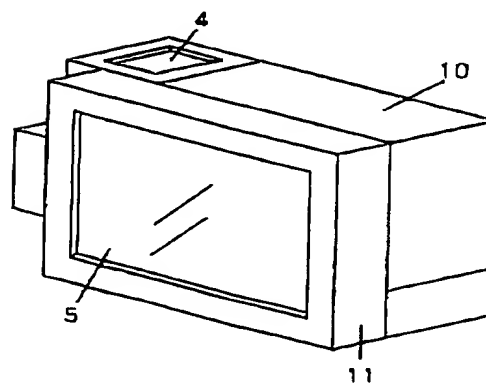
【図4】



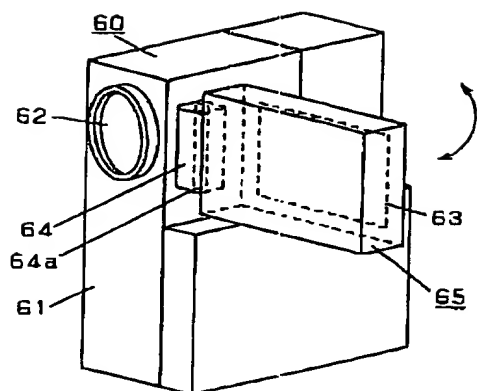
【図3】



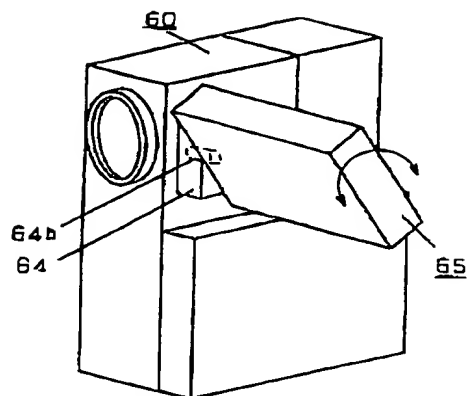
【図5】



【図6】



【図7】



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CLAIMS

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[Claim(s)]

[Claim 1] There are the 1st case which has arranged the record playback section and the television camera section, and the 2nd case equipped with the monitoring screen. Said 2nd case is located in the side face of said 1st case, and is united with said 2nd case through the hinge with which the biaxial rotation which it had near the upper part of said 1st case is attained. Said 2nd case The record regenerative apparatus characterized for the shaft which opens the horizontal shaft of said hinge toward an upper part side as 1st rotation shaft from a lower part side, and crosses at right angles to said 1st rotation shaft by the configuration rotatable as 2nd rotation shaft.

[Claim 2] The record regenerative apparatus according to claim 1 characterized by the configuration which arranges the 1st case longwise and turns the shorter side side of the 2nd case to the upper part of said 1st case.

[Claim 3] The monitoring screen of the 2nd case is a record regenerative apparatus according to claim 2 characterized by the configuration whose enlargement is attained to 1st case and near equivalent.

[Claim 4] The record regenerative apparatus according to claim 2 characterized by the configuration which becomes possible [ leaning the 1st case oblong, turning the long side side of the 2nd case to the upper part, and seeing a monitoring screen in the condition of the monitoring screen of the 2nd case having turned to the opposite side of the 1st case, and having clung in parallel with the side face of the 1st case, ].

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[Translation done.]



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## DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to record regenerative apparatus, such as a video camera.

[0002]

[Description of the Prior Art] In recent years, the thing of a gestalt with various record regenerative apparatus, such as a video camera, is proposed.

[0003] Hereafter, the configuration of the conventional record regenerative apparatus is explained, referring to a drawing. Drawing 6 is the perspective view showing the configuration of the conventional record regenerative apparatus, and is set to drawing 6. The 1st case 60 which has arranged longwise the VTR section 61 and the television camera section 62, There is the 2nd case 65 equipped with the monitoring screen 63, and this 2nd case 65 is arranged oblong on the side face of the 1st case 60. Are united with the 2nd case 65 through the hinge 64 whose biaxial rotation which it had ahead of the 1st case 60 is attained. The 2nd case 65 It is rotatable considering the shaft which opens the shaft of the perpendicular direction of a hinge 64 toward a front side from a back side as 1st rotation shaft 64a, and crosses at right angles to the 1st rotation shaft like drawing 7 as 2nd rotation shaft 64b.

[0004]

[Problem(s) to be Solved by the Invention] However, since the 2nd case 65 is arranged oblong in parallel with the 1st case 60 to the 1st case 60 being arranged longwise with the above-mentioned conventional configuration When the die length by the side of the long side of the 2nd case 65 becomes comparable as the die length by the side of the shorter side of the 1st case 60, the monitoring screen 63 of the 2nd case 65 will become small compared with the 1st case 60, and will be hard coming to check a photographic subject. Moreover, in order to enlarge the monitoring screen 63 of the 2nd case 65, it had the trouble said that die length by the side of the long side of the 2nd case 65 must be enlarged, and portability worsens from the die length by the side of the shorter side of the 1st case 60.

[0005] Portability aims [ a photographic subject ] at offering the record regenerative apparatus which can be checked easily by this invention's solving the above-mentioned conventional trouble, and carrying a large-sized monitoring screen in the record regenerative apparatus constituted longwise.

[0006]

[Means for Solving the Problem] In order to attain this purpose the record regenerative apparatus of this invention There are the 1st case which has arranged the record playback section and the television camera section, and the 2nd case equipped with the monitoring screen. The 2nd case is located in the side face of the 1st case, and is united with the 2nd case through the hinge with which the biaxial rotation which it had near the upper part of the 1st case is attained. The 2nd case The horizontal shaft of a hinge is opened toward an upper part side as 1st rotation shaft from a lower part side, and the shaft which crosses at right angles to the 1st rotation shaft is characterized by the configuration rotatable as 2nd rotation shaft.

[0007] By this configuration, a large-sized monitoring screen can be carried and the record regenerative apparatus which portability is good and a photographic subject can check easily is obtained.

[0008]

[Embodiment of the Invention] The 1st case with which invention of this invention according to claim 1 has arranged the record playback section and the television camera section, There is the 2nd case equipped with the monitoring screen, and the 2nd case is located in the side face of the 1st case. Are united with the 2nd case through the hinge with which the biaxial rotation which it had near the upper part of the 1st case is attained. The

2nd case The horizontal shaft of a hinge is opened toward an upper part side as 1st rotation shaft from a lower part side. It is what is characterized for the shaft which crosses at right angles to the 1st rotation shaft by the configuration rotatable as 2nd rotation shaft. Since rotation support of the 2nd case with which the hinge which has the biaxial rotation shaft constituted perpendicularly has a monitoring screen is carried out in the upper part of the 1st longwise case, it has an operation that a more large-sized monitoring screen can be carried.

[0009] It is what is characterized by the configuration which invention according to claim 2 arranges the 1st case longwise, and turns the shorter side side of the 2nd case to the upper part of the 1st case. Invention according to claim 3 The monitoring screen of the 2nd case is what is characterized by the configuration whose enlargement is attained to 1st case and near equivalent. Invention according to claim 4 It is in the condition which the monitoring screen of the 2nd case turned to the opposite side of the 1st case, and clung in parallel with the side face of the 1st case, and the 1st case is leaned oblong and it is characterized by the configuration which becomes possible [ turning the long side side of the 2nd case to the upper part, and seeing a monitoring screen ].

[0010] Hereafter, the gestalt of operation of this invention is explained using drawing 1 - drawing 5 .

Drawing 1 - drawing 5 are the perspective views showing the configuration of the record regenerative apparatus of this invention. (Gestalt 1 of operation) The condition to which drawing 1 put the 2nd case on the 1st case, the condition from which drawing 2 raised the 2nd case, the condition that drawing 3 rotated [ monitoring screen ] the 2nd case so that it might be legible, and drawing 4 -- being the so-called -- "-- a part for \*\* -- photographing -- " -- the condition which turned the monitoring screen to the direction of a photographic subject at the \*\*, and the condition of having piled up the 1st case and 2nd case as the monitoring screen appeared as for drawing 5 are shown respectively.

[0011] In drawing 1 , 10 is the 1st case, it is constituted longwise, and the VTR section 1 is constituted inside, and the television camera section 3 is constituted at the front, and the dc-battery section 2 is constituted under the television camera section 3 (i.e., the transverse-plane lower part of the 1st case 10). The hinge region 6 for 11 to be the 2nd case, have the field of an EQC or a little small magnitude mostly with the side face of the 1st case 10, and for a monitoring screen 5 to be constituted by the field, and carry out rotation support with the 1st case 10 at the shorter side close-attendants side of a monitoring screen 5 is constituted. A hinge region 6 is constituted near the upper part of the side face of the 1st case 10, and consists of the 2nd rotation shaft 6b perpendicular to 1st horizontal rotation shaft 6a and 1st rotation shaft 6a. 4 is constituted from a finder by the field contrary to the tooth back of the 1st case 10, i.e., a field with the television camera section 3.

[0012] About the record regenerative apparatus constituted as mentioned above, the actuation is explained using drawing 1 - drawing 5 . First, in drawing 1 , optical information is changed into electronic image information by the television camera section 3, and it is recorded in the VTR section 1 as everyone knows, and is converted into a video signal by the finder 4. The monitoring screen 5 which this electronic image information has in the 2nd case 11 is also converted into a video signal.

[0013] Since rotation support is carried out at the 1st case 10 by the hinge region 6 which consists that upper part of the biaxial rotation shaft [ which was constituted perpendicularly ], i.e., the 1st, and 2nd rotation shaft 6a and 6b, this 2nd case 11 becomes the gestalt which shows 1st rotation shaft 6a constituted horizontally first to drawing 2 by rotating as a pivot. Next, it becomes a gestalt as shown in drawing 3 by rotating the 2nd case 11 by using 2nd rotation shaft 6b perpendicular to 1st rotation shaft 6a as a rotation pivot. The monitoring screen 5 of the 2nd case 11 of magnitude almost equivalent to the 1st case 10 will be suitable for the photography person who is looking into the finder 4 by this. a monitoring screen 5 -- the whole flat-surface surface of the 2nd case 11 -- since in other words it can constitute in a field almost equivalent to the side face of the 1st case 10, therefore can be made a large-sized monitoring screen, visibility is very good and the check of the contents of photography can be performed easily.

[0014] this 2nd case rotates with the 2nd rotation shaft -- low-angle photography and yes -- being able to make a monitoring screen 5 go at the photography person front also to angle-type photography, and making a monitoring screen 5 go in the television camera section and this direction like drawing 4 -- a part for \*\* -- also photographing -- it can do. It cannot be overemphasized that the visibility of the contents of photography is very good by the large-sized monitoring screen 5 in any case.

[0015] Furthermore, it is not bulky at the time of carrying by rotating and containing the 2nd case 11, as shown in original drawing 1 , either, and the contents of playback of the VTR section 1 can be converted into a video signal in a large-sized monitoring screen, and it can view [ by many men ] by containing so that a monitoring

screen 5 may be taken out to a table, as shown in drawing 5 and listen easily.

[0016] By arranging the 1st case longwise according to the gestalt of this operation, and making it the configuration which turns the shorter side side of the 2nd case to the upper part of the 1st case as mentioned above The record regenerative apparatus [ it is able for portability to be good, to be able to enlarge the monitoring screen of the 2nd case, and to improve visibility, and ] which can be reproduced in the condition of having been stabilized by widening the 1st case can be offered.

[0017]

[Effect of the Invention] The outstanding effectiveness that a monitoring screen can be seen where visibility became good at the time of photography with a high angle type and confrontation photography in addition to the time of the usual photography and a record regenerative apparatus is stabilized by this invention by carrying a monitoring screen with it at the time of reversal receipt is acquired as mentioned above. [ good and portability and ] [ large-sized ]

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[Translation done.]

**\* NOTICES \***

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2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] The perspective view showing the configuration of the gestalt 1 of operation of the record regenerative apparatus of this invention

[Drawing 2] The configuration perspective view for \*\*\*\* actuation explanation

[Drawing 3] The configuration perspective view for \*\*\*\* actuation explanation

[Drawing 4] The configuration perspective view for \*\*\*\* actuation explanation

[Drawing 5] The configuration perspective view for \*\*\*\* actuation explanation

[Drawing 6] The configuration perspective view of the conventional record regenerative apparatus

[Drawing 7] The perspective view showing the rotation condition of the monitoring screen in the conventional record regenerative apparatus

[Description of Notations]

1 The VTR Section

2 Dc-battery Section

3 Television Camera Section

4 Finder Section

5 Monitoring Screen

6 Hinge

6a The 1st rotation shaft

6b The 2nd rotation shaft

10 1st Case

11 2nd Case

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[Translation done.]

## \* NOTICES \*

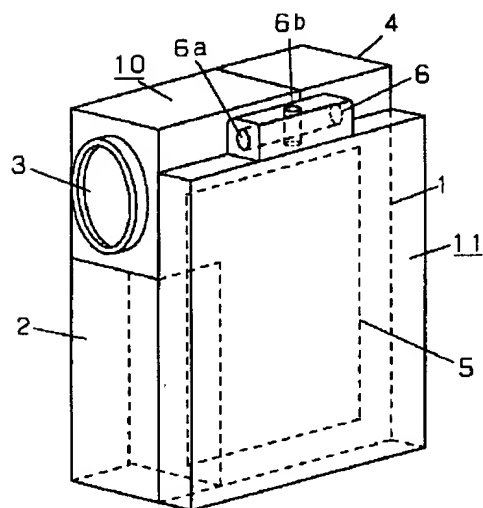
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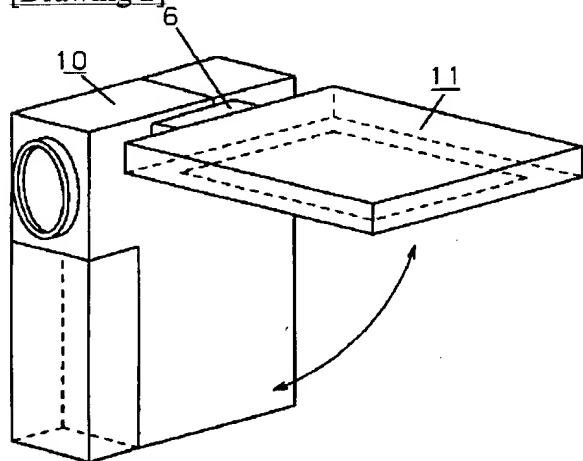
## DRAWINGS

[Drawing 1]

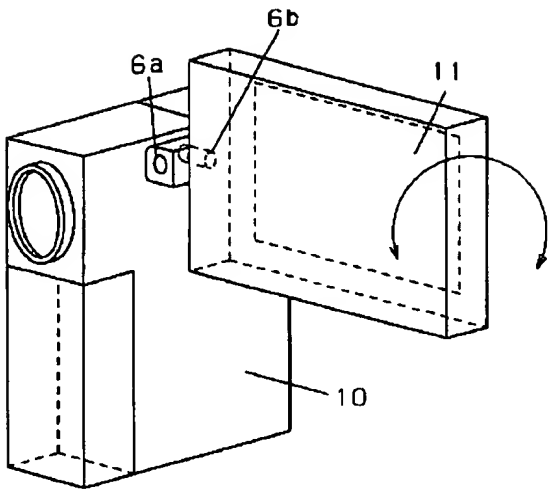
- 1 VTR 部
- 2 バッテリー部
- 3 テレビカメラ部
- 4 ファインダー部
- 5 モニター画面
- 6 ヒンジ
- 6a 第1の回転軸
- 6b 第2の回転軸
- 10 第1の筐体
- 11 第2の筐体



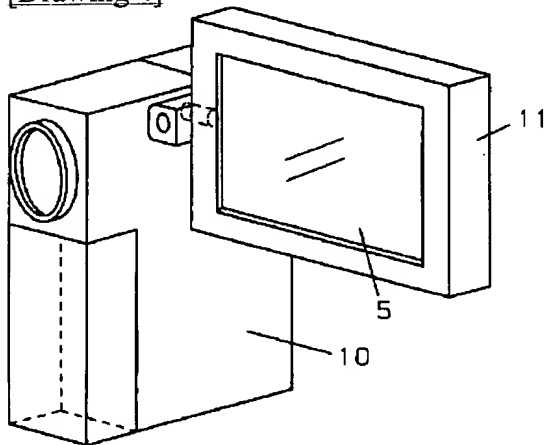
[Drawing 2]



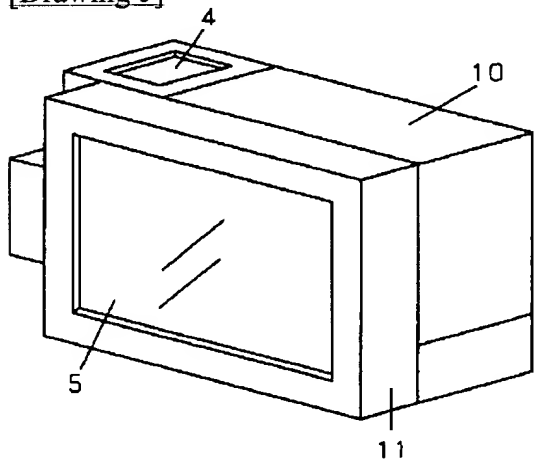
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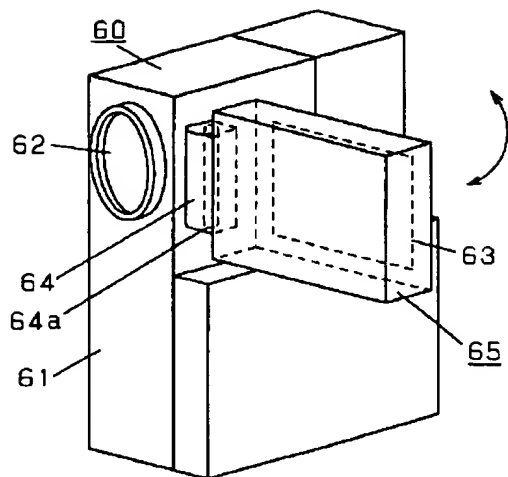
[Drawing 4]



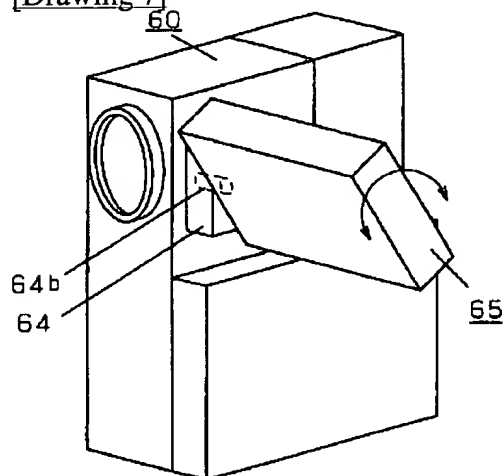
[Drawing 5]



[Drawing 6]



[Drawing 7]



[Translation done.]